

Add-on Plastic Tips for Cryogen Administration in Difficult-to-access Areas

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ABSTRACT

Targeted cryotherapy of lesions in difficult to access location is a challenging scenario. We propose the use of add-on tips fashioned from disposable micropipettes, needle caps, and syringe barrels as a solution.

Keywords: Cryotherapy, mucosa, wart



Figure 1: Disposable micropipette tip attached to cryocan nozzle for use inside the concha of ear

Administering cryogen in difficult-to-access areas (such as the external ear canal/concha, nasal cavity, female genital tract, and perianal area) is a challenging scenario for dermatologists and can cause significant distress to



Video 1: Assembly of micropipette tip on the cryocan.

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patients.^[1] We have found that using plastic tips fashioned from disposable micropipettes, dropper pipettes, needle caps, and small syringe barrels can easily solve this problem.

Disposable tips of micropipettes come in various sizes and lengths. The tip of the micropipette is cut to conform to the size and site of the lesion and attached to the proximal end to the cryocan nozzle to easily deliver cryogen to the target lesion in anatomically convoluted and sensitive locations [Figure 1 and Video 1]. Other options including needle caps, small-volume syringe

barrels, and disposable plastic pipettes can be cut in a similar fashion, through which the straight or bent metal tip attachments of the cryocan can be inserted to spray the cryogen [Figure 2]. We trialed these options on two different commercially available models of cryocan and found them to be safe, feasible, and highly useful. The attachment can be selected according to the size of the lesion and the depth at which it is located. The narrow tips can help the cryogen to reach the lesion without affecting normal skin. The patient who had a viral wart in the ear canal [Figure 3A] could be managed by targeted cryotherapy without affecting the peripheral

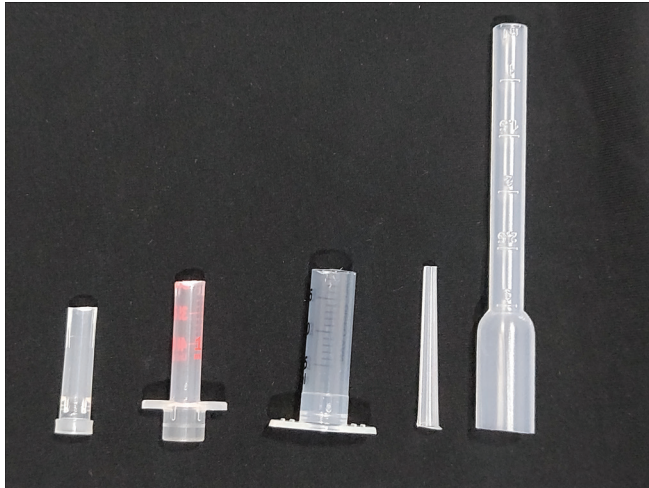


Figure 2: Different options of add-on plastic tip attachments cut at different lengths: needle cap, 1cc and 2.5cc syringe barrels, tapering tip, and proximal portion of plastic dropper



Figure 4: Customized plastic dropper as a disposable extension fitting over the standard straight tip cryocan nozzle

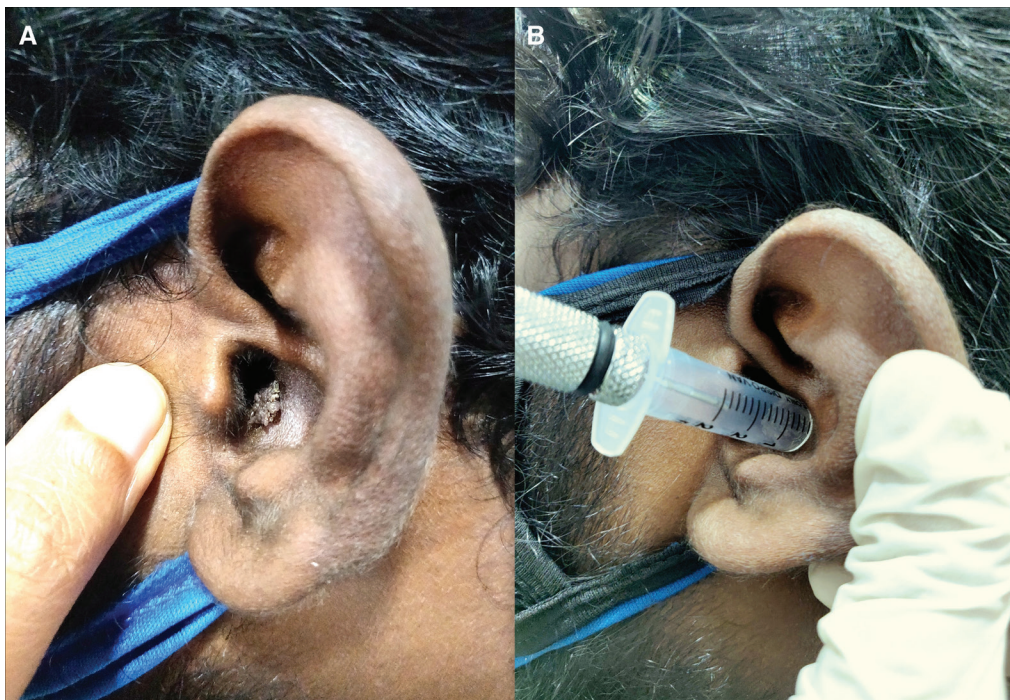


Figure 3: (A) Viral wart in the ear canal. (B) Targeted and stabilized cryotherapy using a modified syringe barrel attached over cryocan nozzle

normal skin using the modified barrel of a 2cc syringe [Figure 3B]. The guard of the syringe barrel helps to stabilize the tip of cryocan during delivery. Micropipettes and transfer pipettes are readily available in most dermatology practices for use in procedures like platelet-rich plasma therapy. Our proposed modification has clear advantages over alternatives like otoscope specula, as these are available in different sizes, are disposable, transparent, and in addition, easily maneuverable.^[2] They can be sterilized by ethylene oxide (ETO) method as well. A sterile plastic dropper cut at the desired length and placed over the cryocan nozzle can be particularly useful as a disposable extension to treat lesions like deep-seated warts in the female genital mucosa [Figure 4].

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Conflicts of interest

There are no conflicts of interest.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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